

SPECIFICATION AMENDMENTS

Please amend the Specification as follows.

[0032] Tuning etalon 12 as shown in FIG. 1A and 1B represents only one type of tunable element or channel selector that may be used with the invention. Etalon 12 may be replaced with a variety of tunable elements other than an etalon, such as grating devices, prisms, electro-optic devices, and movable reflectors used in conjunction with gratings or prisms. The use of a tapered air gap etalon as a channel selector is described in U.S. Patent No. 6,108,355, wherein the "wedge" is a tapered air gap defined by adjacent substrates. The use of pivotally adjustable grating devices as channel selectors tuned by grating angle adjustment and the use of an electro-optic tunable channel selector in an external cavity laser and tuned by selective application of voltage are described in U.S. Patent Application Ser. No. 09/814,464 09/814,646 filed on March 21, 2001. The use of a translationally tuned graded thin film interference filter is described in U.S. Patent Application Ser. No. 09/814,464 09/814,646 filed on March 21, 2001 and U.S. Patent Application Ser. No. 09/900,412 filed on July 6, 2001. The aforementioned disclosures are incorporated herein by reference. Various other tunable elements usable with external cavity lasers will suggest themselves to those skilled in the art, and are also considered to be within the scope of this disclosure.

[0036] When laser apparatus 10 is tuned to a different communication channel, controller 44 signals drive element 20 according to positional data in the stored look up table, and drive element 20 translates or otherwise drives tuning element 12 to the correct position via magnetic coupling elements 22 and 24, wherein the optical thickness of the portion of the tapered etalon 12 positioned in optical path 33 [[18]] provides constructive interference which supports the selected channel. A linear encoder (not shown) may be used in association with tuning etalon 12 and drive element 20 to ensure correct positioning of tuning element 12 by driver 20. FIG. 1A shows a relatively thin thick portion of etalon 12 positioned in optical path 33 [[22]], while FIG. 1B shows a thicker thinner portion of etalon 12 positioned in optical path 33 [[22]]. The two positions of etalon 12 shown in FIG. 1A and FIG. 1B provide feedback to gain medium 12 at different wavelengths. The

tuning of an external cavity laser using tapered etalon is described further in U.S. Patent Application Ser. No. 09/814,464 ~~09/814,646~~, noted above.

[0038] Tuning etalon 12 may include opaque regions 46, 50 [[48]] at its ends that are optically detectable and which serve to verify the position of tuning element 12 when it has been positionally tuned to its longest or shortest channel wavelength. Opaque regions provide an additional encoder mechanism usable in the positional tuning of the tuning element. When tuning element 12 is moved into a position such that one of opaque regions 46, 48 enters optical path 33 [[18]], the opaque region 46, 50 [[48]] will block or attenuate the beam along the optical path. This attenuation of light is detectable, as described further below. Since the location of opaque regions on tuning element 12 can be determined with precision, controller 44 can anticipate when an opaque region 46, 50 [[48]] will enter optical path 33 [[18]]. Appearance of an opaque region 46, 48 in optical path 33 [[18]] at a point other than predicted will indicate an encoder error, and the controller 44 can make an appropriate correction based on the detected presence of an opaque region 46, 50 [[48]] in optical path 33 [[18]]. Additional opaque regions (not shown) may be included elsewhere on tuning element 12.